

SUPPLEMENTAL TESTIMONY OF
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HAWAIIAN ELECTRIC COMPANY, INC.

Subject: Cost Changes

1 INTRODUCTION

2 Q. Please state your name and business address.

3 A. My name is Earlynne F. Oshiro and my business address is 820 Ward Avenue,
4 Honolulu, Hawaii.

5 Q. Have you previously submitted testimony in this proceeding?

6 A. Yes. I submitted written direct testimony and exhibits as HECO T-9.

7 Q. What is the scope of your supplemental testimony?

8 A. My testimony will address how the changes to Phase 1 of the project and the
9 change in the project schedule have affected the cost of the East Oahu
10 Transmission Project ("46kV Phased Project"). In addition, I will address the
11 potential cost impacts related to the City's directive on paving.

12 Q. What are the changes to Phase I of the project?

13 A. Two changes have been proposed to Phase 1 of the 46kV Phased Project as
14 described in Mr. Wong's supplemental testimony, HECO ST-2.

15 1. Change #1 proposes to utilize existing ductlines instead of constructing a
16 new ductline for a significant portion of the route for the two new 46kV
17 underground circuits proposed between Makaloa and McCully
18 Substations.

19 2. Change #2 proposes to connect existing 46kV circuits near Pumehana
20 Street in an alternative manner than originally proposed.

21 Q. What are the changes regarding the project schedule?

22 A. The revised overall project schedule is discussed by Mr. Wong in HECO ST-6.
23 The revised project schedule currently estimates Phase 1 in service in 2007 and
24 Phase 2 in 2009.

25 Q. What is the change regarding the City's directive on paving?

1 A. As described in Mr. Wong's supplemental testimony, HECO ST-2, and Mr.
2 Harrington's supplemental testimony, HECO ST-8, the City has issued a new
3 directive requiring roadways trenched for utility installations to be repaved curb-
4 to-curb. City Ordinance Section 14-17(e) generally requires a City roadway to be
5 repaved for only that portion of the street that was trenched.

6
7 CHANGES TO COST ESTIMATE

8 Q. What is the estimated total initial installation cost of the 46kV Phased Project as a
9 result of Change #1 and Change #2 as described in Mr. Wong's supplemental
10 testimony, HECO ST-2, and the revised schedule as described by Mr. Wong in
11 HECO ST-6?

12 A. The total initial installation cost for the 46kV Phase Project (Item Y 48500, East
13 Oahu Transmission Project) is currently estimated at \$55,644,000.

14 Q. How does this cost estimate compare to the cost estimate in the project
15 Application filed on December 18, 2003?

16 A. The estimated initial installation cost for the 46kV Phased Project in the
17 Application was approximately \$55,424,000, as shown in HECO-ST-901, page 1.
18 Therefore, the implementation of Change #1 and Change #2, and the revised
19 schedule have resulted in an increase of approximately \$220,000. (See HECO-
20 ST-901).

21 Q. How did Change #1 affect the total initial installation cost?

22 A. Change #1 decreased the total initial installation cost by approximately
23 \$1,390,000. Utilizing the existing ductline between the existing Makaloa and
24 McCully substations eliminates trenching, which reduces the cost for the project.

25 Q. How did Change #2 affect the total initial installation cost?

1 A. Change #2 increased the total initial installation cost by approximately \$258,000.
2 As described by Mr. Wong in HECO ST-2, Change #2 will require a longer
3 ductline on Pumehana Street, which will increase the cost of the project.

4 Q. Were the same assumptions used to estimate the initial installation costs of
5 Change #1 and Change #2 as were used for the original proposal?

6 A. Yes, except for the ductline installation costs on Makaloa Street (Change #1) and
7 Pumehana Street (Change #2). Since the Application filing, more detailed
8 information was obtained on some of the proposed routes, which indicated that the
9 previous cost estimate should be refined to better account for the actual field
10 conditions. For Makaloa Street, it was confirmed that numerous underground
11 utilities occupy the street. With little space left for a new ductline, HECO
12 facilities will have to be located deeper than was previously estimated. In
13 addition, soil conditions are poor along Makaloa and Pumehana Streets requiring
14 HECO to over excavate and create a base of fine gravel in a fabric filter to support
15 the ductline. The engineering and construction costs for Change #1 and Change
16 #2 were developed to account for the identified field conditions.

17 Q. What would have been the consequence if the same assumptions used for Makaloa
18 and Pumehana Streets in the Application were used to develop the initial
19 installation cost estimates for Change #1 and Change #2?

20 A. The cost estimate for the project would be understated.

21 Q. How much has the revised schedule contributed to the total project cost increase?

22 A. As shown in HECO-ST-901, the revised schedule contributes approximately
23 \$1,354,000 to the overall increase in the project cost.

24 Q. What is the most significant factor contributing to the cost increase for the revised
25 schedule?

1 A. As shown in HECO-ST-901, Allowance For Funds Used During Construction
2 ("AFUDC") increases by approximately \$1,269,000, because of the revised
3 schedule. This accounts for most of the \$1,354,000 total project increase due to
4 the revised schedule alone.

5 Q. What also contributed to the total project cost increase due to the revised
6 schedule?

7 A. The effects of inflation contributed to the project cost increase as certain costs for
8 labor and materials were shifted into later years per the revised schedule. These
9 accounted for about 6% of the total project increase.

10 Q. Based on the cost estimates and assumptions for the revised schedule and
11 proposed Change #1 and Change #2, were annual revenue requirements calculated
12 for the 50-year study period as was done in the Application for the original
13 proposal?

14 A. Yes. The revenue requirements are estimates of all the costs associated with an
15 investment. The revenue requirements include the following types of costs:
16 capital costs, removal and new cycle costs, operations and maintenance costs, and
17 transmission line losses costs.

18 Q. What is the net present value of the annual revenue requirements for the 46kV
19 Phased Project with Change #1 and Change #2, assuming the revised schedule and
20 using an 8.4% discount rate?

21 A. As shown in HECO-ST-901, the net present value of the annual revenue
22 requirements in 2003 is \$55.5 million; compared to the net present value of the
23 annual revenue requirements in 2003 at an 8.4% discount rate for the original
24 proposal of approximately \$59.9 million.

25 Q. What is the estimated impact on residential rates of the 46kV Phased Project

1 assuming the revised schedule with Changes #1 and #2?

2 A. The incremental rate impact per month for the typical residential customer would
3 be an increase of \$0.73 in 2008, the year after Phase 1 is installed. After Phase 2
4 is installed, the rate impact for a typical residential customer's bill would be an
5 increase of \$0.93 in 2010.

6 Q. How does the rate impact compare to the rate impact calculated for the original
7 proposal as described in your testimony, HECO T-9?

8 A. For the original proposal, the incremental rate impact per month for the typical
9 residential customer was estimated to be an increase of \$0.72 in 2007, the year
10 after Phase 1 was assumed to be installed. After Phase 2 is installed, the rate
11 impact for a typical residential customer's bill was estimated to be an increase of
12 \$0.90 in 2009. Therefore, with the current cost estimate, there would be an
13 additional rate impact increase of approximately \$0.01 for Phase 1 and \$0.03 for
14 Phase 2.

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16 CITY'S DIRECTIVE ON CURB-TO-CURB REPAVING

17 Q. What would be the estimated total cost of the 46kV Phased Project if the City's
18 directive on curb-to-curb repaving were enforced as described in Mr. Wong's
19 supplemental testimony, HECO ST-2, and Mr. Harrington's supplemental
20 testimony, HECO ST-9, including the implementation of Change #1 and Change
21 #2 with the revised schedule?

22 A. As shown in HECO-ST-901, the estimated total cost of the 46kV Phased Project if
23 the City's directive on curb-to-curb repaving is enforced including the
24 implementation of Change #1 and Change #2 with the revised schedule is
25 approximately \$60,910,000.

1 Q. How does this cost compare to the revised cost in the project?

2 A. The estimated cost for the 46kV Phased Project is approximately \$55,644,000.
3 Therefore, if the City's directive were enforced, there would be an increase of
4 approximately \$5,266,000 to the overall project cost.

5 Q. What portion of the 46kV Phased Project would be most affected in terms of cost
6 if the City's directive were enforced?

7 A. The estimated cost for Phase 2 of the project would increase by \$4,661,000, as
8 compared to the estimated cost increase for Phase 1 of \$604,000. The majority of
9 the repaving work for Phase 2 would occur on King Street, which is a five to six
10 lane roadway. The total lineal length of roadway to repave is approximately 9,900
11 lineal feet, which includes King Street, Cooke Street, and McCully Street. A
12 majority of the roadways to be repaved in Phase 1 are two lane roadways that total
13 approximately 2,500 lineal feet.

14 Q. What would be the estimated impact on residential rates?

15 A. In the year following the project installation (2008 and 2010), the incremental rate
16 impact per month for the typical residential customer would be an increase of
17 \$0.74 in 2008 after Phase 1 is installed. After Phase 2 is installed, the rate impact
18 for a typical residential customer's bill would be an increase of \$1.02 in 2010.
19 (See HECO-ST-901).

20 Q. How do these rate impacts compare to the rate impacts calculated for the original
21 proposal?

22 A. For the original proposal, the incremental rate impact per month for the typical
23 residential customer was estimated to be an increase of \$0.72 in 2007 after Phase
24 1 is installed. After Phase 2 is installed, the rate impact on a typical residential
25 customer's bill was estimated to be an increase of \$0.90 in 2009. Therefore, there

1 would be an increased estimated rate impact of approximately \$0.02 for Phase 1
2 and \$0.12 for Phase 2.

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4 SUMMARY

5 Q. Please summarize your testimony.

6 A. In the Application and my testimony, HECO T-9, filed on December 18, 2003, the
7 initial installation cost for 46kV Phased Project was estimated at approximately
8 \$55,424,000. The net present value of the annual revenue requirements in 2003
9 using an 8.4% discount rate was estimated at \$59.9 million. The incremental rate
10 impact per month for a typical residential customer was estimated at \$0.72 in
11 2007, the year after Phase 1 is installed. After Phase 2 is installed, the rate impact
12 was estimated at \$0.90 in 2009.

13 With Changes #1 and #2 to Phase 1 of the project, and the revised schedule,
14 the revised total initial installation cost is approximately \$55,644,000, which is
15 approximately \$220,000 more than the estimate in the Application.

16 The net present value of the annual revenue requirements in 2003 using an
17 8.4% discount rate of the 46kV Phased Project with Changes #1 and #2, and the
18 revised schedule is estimated at \$55.5 million. The incremental rate impact per
19 month for a typical residential customer is estimated at \$0.73 in 2008, the year
20 after Phase 1 is installed. After Phase 2 is installed, the rate impact is estimated at
21 \$0.93 in 2010.

22 If the City's new directive requiring roadways that have been trenched for
23 utility installations to be repaved curb-to-curb is enforced, the total initial
24 installation cost of the project would be approximately \$60,910,000, which is
25 approximately \$5,266,000 more than the revised estimate, and \$5,486,000 more

1 than the original estimate. The incremental rate impact per month for a typical
2 residential customer associated with this higher cost estimate is estimated at \$0.74
3 in 2008, the year after Phase 1 is installed. After Phase 2 is installed, the rate
4 impact is estimated at \$1.02 in 2010.

5 Q. Does this conclude your testimony?

6 A. Yes, it does.

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